



June 20, 2013

Mr. Mark Nations
The Doe Run Company
P.O. Box 1633
Desloge, Missouri 63601

Re: Ambient Air Monitoring Report – Federal Site

Dear Mr. Nations:

Please find attached the February 2013 "*Ambient Air Monitoring Report*" for The Doe Run Company at the Federal Mine Tailings Site, located near Park Hills, Missouri.

This report will include the following:

- **Glossary of Terms** – Listing of the abbreviations used for each parameter and unit.
- **Ambient Air Quality Standards** – Lists the maximum allowable concentrations for the measured parameters.
- **TSP, Lead & PM₁₀ Particulate Summaries** – Includes the averages of each monitored parameter, which relates to the federal standards.
- **Particulate and Lead Analysis Spreadsheets.**
- **Lab Results (lead & cadmium)** – Lab reports from Inovatia Laboratories, LLC.
- **Meteorological Data Printouts** – This supplies printouts of each parameter.

Barr Engineering Company offers this report as an independent laboratory. This includes the weighing of filters, obtaining lead and cadmium analysis, compiling the data, and preparing the report. No interpretation of the data or analysis of the results is implied or intended. Should you have any questions regarding this report, please call.

Respectfully,

A handwritten signature in cursive script that reads "Richard J. Campbell".

Richard J. Campbell, PE
Chemical Engineer
Senior Environmental Consultant

c: Bob Hinkson
Jason Gunter
Ty Morris

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Ambient Air Monitoring Report

***Federal Mine Tailings Site
Park Hills, Missouri***

***Prepared for
The Doe Run Company***

February 2013



Ambient Air Monitoring Report

***Federal Mine Tailings Site
Park Hills, Missouri***

The Doe Run Company

February 2013



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Jefferson City, MO 65109
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GLOSSARY OF TERMS

$\mu\text{g}/\text{m}^3$	Micrograms per Cubic Meter
mph	Miles per Hour
Wind Direction	Degrees from True North
TSP	Total Suspended Particulate
PM ₁₀	Particulate Matter - 10 Microns or Less
mmHg	Millimeters of Mercury

NATIONAL AMBIENT AIR QUALITY STANDARDS (NAAQS)

PM ₁₀ – Particulate Matter	24-Hour*	Annual Maximum	150 $\mu\text{g}/\text{m}^3$
Lead	Calendar Quarter	Arithmetic Mean	1.5 $\mu\text{g}/\text{m}^3$
Lead	Rolling 3-Month Average	Arithmetic Mean	0.15 $\mu\text{g}/\text{m}^3$

TSP (Total Suspended Particulate) – There are no Federal Standards that apply solely for TSP.

*This standard must be exceeded more than once a year to constitute a violation.



TSP and Lead Concentration Summary

Federal
Park Hills, Missouri

Date 2013	TSP			LEAD		
	#1 - Water Plant ($\mu\text{g}/\text{m}^3$)	#2 - Big River #4 ($\mu\text{g}/\text{m}^3$)	#4 - St. Joe Park ($\mu\text{g}/\text{m}^3$)	#1 - Water Plant ($\mu\text{g}/\text{m}^3$)	#2 - Big River #4 ($\mu\text{g}/\text{m}^3$)	#4 - St. Joe Park ($\mu\text{g}/\text{m}^3$)
2/1/13	8	7	10	0.009	0.008	0.022
2/4/13	20	19	17	0.025	0.046	0.046
2/5/13	19	15	19	0.071	0.017	0.019
2/6/13	14	19	16	0.000	0.000	0.000
2/7/13	13	12	24	0.000	0.000	0.022
2/8/13	9	9	11	0.000	0.000	0.000
2/11/13	8	10	9	0.010	0.009	0.000
2/12/13	12	16	14	0.000	0.011	0.000
2/13/13	13	8	11	0.023	0.016	0.029
2/14/13	14	20	11	0.014	0.035	0.000
2/15/13	12	35	11	0.008	0.050	0.000
2/18/13	12	12	55	0.024	0.012	0.139
2/19/13	13	23	12	0.042	0.025	0.000
2/20/13	20	28	18	0.008	0.014	0.000
2/21/13	4	10	10	0.006	0.009	0.008
2/25/13	11	14	18	0.000	0.006	0.029
2/26/13	5	4	5	0.000	0.000	0.000
2/27/13	10	10	6	0.011	0.000	0.000
2/28/13	7	7	7	0.000	0.000	0.000
Monthly Average	12	15	15	0.013	0.014	0.017
Jan 2013				0.015	0.020	0.012
Dec 2012				0.011	0.018	N/A
Rolling 3-month Average				0.013	0.017	0.014
				3-month Average Lead NAAQS $\mu\text{g}/\text{m}^3$ 0.15		

Please see the particulate analysis sheets for explanations of missing or invalid data.

Note 1: A summary of the Big River #4 sampler data is also included, because it was part of the QA plan.

Note 2: A summary of the National #3 East - WTP sampler data is included because it is the same sampling site as Federal #1 Water Plant.

Particulate and Lead Analysis



TSP and Lead Analysis

The Doe Run Company

SAMPLER ID P4475

Federal Site #1 Water Plant

Sample Date 2013	Filter ID	TSP Filter Net Wt. g	Lead Total Wt. mg	T _{av} C	P _{av} mmHg	P _f mmHg	Ratio P _f /P _a	Q _a m ³ /min	Q _{std} m ³ /min	Elapsed Time hr	Sample Volume V _{std} m ³	Mass Concentrations TSP µg/m ³	Lead µg/m ³
2/1/2013	8642246	0.0147	17	-7	754.6	32.3	0.957	1.180	1.309	23.64	1857	8	0.009
2/4/2013	8642235	0.0354	43	7	741.9	34.0	0.954	1.203	1.247	23.67	1771	20	0.025
2/5/2013	8642225	0.0350	128	5	744.1	33.7	0.955	1.199	1.258	23.86	1801	19	0.071
2/6/2013	8642217	0.0252	< 10	5	748.2	33.7	0.955	1.199	1.265	23.78	1805	14	0.000
2/7/2013	8642204	0.0237	< 10	10	743.4	34.3	0.954	1.207	1.244	23.68	1767	13	0.000
2/8/2013	8698996	0.0159	< 10	2	751.2	33.3	0.956	1.194	1.279	23.86	1830	9	0.000
2/11/2013	8698985	0.0149	19	5	746.0	33.7	0.955	1.200	1.261	23.79	1799	8	0.010
2/12/2013	8698973	0.0209	< 10	2	746.5	33.3	0.955	1.194	1.270	23.76	1810	12	0.000
2/13/2013	8698965	0.0225	40	5	742.0	33.7	0.955	1.199	1.254	23.75	1787	13	0.023
2/14/2013	8698952	0.0248	24	7	743.3	34.0	0.954	1.203	1.250	23.72	1779	14	0.014
2/15/2013	8698942	0.0228	15	2	749.6	33.3	0.956	1.194	1.276	23.78	1821	12	0.008
2/18/2013	8698931	0.0207	43	8	739.7	34.1	0.954	1.204	1.240	23.73	1766	12	0.024
2/19/2013	8698921	0.0233	77	0	748.0	33.1	0.956	1.191	1.278	23.71	1818	13	0.042
2/20/2013	8698911	0.0365	16	-5	753.5	32.5	0.957	1.183	1.302	23.78	1857	20	0.008
2/21/2013	8698903	0.0074	11	-3	746.6	32.6	0.956	1.185	1.286	23.71	1829	4	0.006
2/25/2013	8699189	0.0199	< 10	3	742.5	33.5	0.955	1.196	1.259	23.69	1790	11	0.000
2/26/2013	8699180	0.0091	< 10	3	732.6	33.5	0.954	1.195	1.242	23.78	1773	5	0.000
2/27/2013	8699169	0.0182	20	1	741.3	33.2	0.955	1.192	1.264	23.71	1798	10	0.011
2/28/2013	8699157	0.0134	< 10	0	745.7	33.1	0.956	1.191	1.273	23.59	1802	7	0.000

Data Captured	TSP	Lead
Valid Samples:	19	19
Scheduled Samples:	19	19
Percent Data Captured:	100%	100%

Monthly Average:	12	0.013
Standard Deviation:	4	0.018
Maximum:	20	0.071
Minimum:	4	0.000

NOTES

2/22/2013 - Ice Storm - No samples taken

DEFINITIONS and CALCULATIONS

T_{av} = average temperature in degrees Celcius
P_{av} = average station pressure in millimeters of mercury
P_f = (((Temp in °Kelvin * Temp Slope))+Temp Int.))*1.868
P_i = ((Temp in °Kelvin * 0.0664)+(-0.4213))*1.868
P_f/P_a = pressure ratio of P_f and P_{av} = 1 - Pf/P_{av}

Q_a = look up table volumetric flow rate
Q_{std} = total sample volumetric flow rate corrected to standard conditions
V_{std} = total sample volume corrected to standard conditions
TSP = mass concentration in µg/std m³
Lead = mass concentration in µg/std m³



TSP and Lead Analysis

The Doe Run Company

SAMPLER ID P6792

Federal Site #4 St. Joe Park

Sample Date 2013	Filter ID	TSP Filter Net Wt. g	Lead Total Wt. mg	T _{av} C	P _{av} mmHg	P _f mmHg	Ratio P _f /P _a	Q _a m ³ /min	Q _{std} m ³ /min	Elapsed Time hr	Sample Volume V _{std} m ³	Mass Concentrations TSP μg/m ³	Lead μg/m ³
2/1/2013	8642252	0.0186	41	-7	754.6	32.3	0.957	1.192	1.323	23.58	1872	10	0.022
2/4/2013	8642242	0.0304	82	7	741.9	34.0	0.954	1.208	1.252	23.56	1770	17	0.046
2/5/2013	8642231	0.0337	33	5	744.1	33.7	0.955	1.204	1.263	23.54	1784	19	0.019
2/6/2013	8642215	0.0286	< 10	5	748.2	33.7	0.955	1.204	1.270	23.59	1798	16	0.000
2/7/2013	8642211	0.0422	38	10	743.4	34.3	0.954	1.212	1.249	23.64	1772	24	0.022
2/8/2013	8698994	0.0192	< 10	2	751.2	33.3	0.956	1.199	1.284	23.58	1817	11	0.000
2/11/2013	8698983	0.0152	< 10	5	746.0	33.7	0.955	1.204	1.265	23.62	1793	9	0.000
2/12/2013	8698979	0.0255	< 10	2	746.5	33.3	0.955	1.199	1.275	23.49	1797	14	0.000
2/13/2013	8698963	0.0188	52	5	742.0	33.7	0.955	1.204	1.259	23.54	1779	11	0.029
2/14/2013	8698959	0.0199	< 10	7	743.3	34.0	0.954	1.208	1.255	23.58	1776	11	0.000
2/15/2013	8698948	0.0207	< 10	2	749.6	33.3	0.956	1.199	1.281	23.57	1812	11	0.000
2/18/2013	8698938	0.0963	245	8	739.7	34.1	0.954	1.209	1.246	23.53	1758	55	0.139
2/19/2013	8698927	0.0223	< 10	0	748.0	33.1	0.956	1.196	1.283	23.50	1810	12	0.000
2/20/2013	8698917	0.0332	< 10	-5	753.5	32.5	0.957	1.188	1.307	23.45	1839	18	0.000
2/21/2013	8698901	0.0184	15	-3	746.6	32.6	0.956	1.189	1.291	23.60	1828	10	0.008
2/25/2013	8699196	0.0324	52	3	742.5	33.5	0.955	1.201	1.265	23.55	1787	18	0.029
2/26/2013	8699184	0.0091	< 10	3	732.6	33.5	0.954	1.200	1.248	23.53	1761	5	0.000
2/27/2013	8699175	0.0112	< 10	1	741.3	33.2	0.955	1.197	1.269	23.53	1791	6	0.000
2/28/2013	8699164	0.0133	< 10	0	745.7	33.1	0.956	1.196	1.278	23.42	1796	7	0.000

Data Captured	TSP	Lead
Valid Samples:	19	19
Scheduled Samples:	19	19
Percent Data Captured:	100%	100%

Monthly Average:	15	0.017
Standard Deviation:	11	0.033
Maximum:	55	0.139
Minimum:	5	0.000

NOTES

2/22/2013 - Ice Storm - No samples taken

Filter Blank

2/27/2013 8699165 -0.0035 < 10

TSP Tolerance ≤5 μg/m³

Nominal Volume 1631 -2.1 0.000

DEFINITIONS and CALCULATIONS

T_{av} = average temperature in degrees Celcius
P_{av} = average station pressure in millimeters of mercury
P_f = (((Temp in °Kelvin * Temp Slope))+Temp Int.))*1.868
P_f = ((Temp in °Kelvin * 0.0664)+(-0.4213))*1.868
P_f/P_a = pressure ratio of P_f and P_{av} = 1 - P_f/P_{av}

Q_a = look up table volumetric flow rate
Q_{std} = total sample volumetric flow rate corrected to standard conditions
V_{std} = total sample volume corrected to standard conditions
TSP = mass concentration in μg/std m³
Lead = mass concentration in μg/std m³



TSP and Lead Analysis

The Doe Run Company

SAMPLER ID P6609

Big River Site #4 - QA

Sample Date 2013	Filter ID	TSP Filter Net Wt. g	Lead Total Wt. mg	T _{av} C	P _{av} mmHg	P _f mmHg	Ratio P _f /P _a	Q _a m ³ /min	Q _{std} m ³ /min	Elapsed Time hr	Sample Volume V _{std} m ³	Mass Concentrations	
												TSP µg/m ³	Lead µg/m ³
2/5/2013	8642238	0.0237	30	5	744.1	33.7	0.955	1.203	1.263	23.61	1789	13	0.017
2/7/2013	8642207	0.0195	< 10	10	743.4	34.3	0.954	1.212	1.249	23.70	1776	11	0.000
2/12/2013	8698988	0.0280	20	2	746.5	33.3	0.955	1.199	1.275	23.48	1796	16	0.011
2/14/2013	8698955	0.0384	67	7	743.3	34.0	0.954	1.208	1.255	23.60	1777	22	0.038
2/19/2013	8698934	0.0427	53	0	748.0	33.1	0.956	1.196	1.283	23.65	1821	23	0.029
2/21/2013	8699197	0.0163	15	-3	746.6	32.6	0.956	1.189	1.291	23.63	1830	9	0.008
2/26/2013	8699192	0.0055	< 10	3	732.6	33.5	0.954	1.200	1.247	23.59	1765	3	0.000
2/28/2013	8699160	0.0145	< 10	0	745.7	33.1	0.956	1.196	1.278	23.59	1809	8	0.000

Data Captured	TSP	Lead
Valid Samples:	8	8
Scheduled Samples:	8	8
Percent Data Captured:	100%	100%

Monthly Average:	13	0.013
Standard Deviation:	7	0.014
Maximum:	23	0.038
Minimum:	3	0.000

NOTES

DEFINITIONS and CALCULATIONS

T_{av} = average temperature in degrees Celcius

P_{av} = average station pressure in millimeters of mercury

P_f = (((Temp in °Kelvin * Temp Slope))+Temp Int.)*1.868

P_f = ((Temp in °Kelvin * 0.0664)+(-0.4213))*1.868

P_f/P_a = pressure ratio of P_f and P_{av} = 1 - P_f/P_{av}

Q_a = look up table volumetric flow rate

Q_{std} = total sample volumetric flow rate corrected to standard conditions

V_{std} = total sample volume corrected to standard conditions

TSP = mass concentration in µg/std m³

Lead = mass concentration in µg/std m³



PM₁₀ Analysis

The Doe Run Company

SAMPLER ID P2951										Federal Site #1 Water Plant	
Sample Date 2013	Filter ID	PM10 Filter Net Wt. g	T _{av} C	P _{av} mmHg	P _f mmHg	Ratio P _o /P _a	Q _a m ³ /min	Q _{std} m ³ /min	Elapsed Time hr	Sample Volume V _{std} m ³	Mass Conc. PM ₁₀ µg/m ³
2/3/2013	288594	0.0084	2	747.3	33.3	0.955	1.117	1.189	23.48	1675	5
2/6/2013	288583	0.0118	5	748.2	33.7	0.955	1.122	1.183	23.41	1662	7
2/9/2013	288573	0.0157	2	750.4	33.3	0.956	1.117	1.195	23.49	1685	9
2/12/2013	288560	0.0154	2	746.5	33.3	0.955	1.117	1.188	23.47	1673	9
2/15/2013	288551	0.0104	2	749.6	33.3	0.956	1.117	1.194	23.47	1681	6
2/18/2013	288541	0.0092	8	739.7	34.1	0.954	1.127	1.160	23.44	1632	6
2/21/2013	288530	0.0156	-3	746.6	32.6	0.956	1.108	1.203	23.43	1691	9
2/27/2013	288520	0.0159	1	741.3	33.2	0.955	1.115	1.182	23.45	1663	10

Valid Samples:	8	Monthly Average:	8
Scheduled Samples:	8	Standard Deviation:	2
Percent Data Captured:	100%	Maximum:	10
		Minimum:	5

NOTES

2/24/2013 - Ice Storm - No samples taken

DEFINITIONS and CALCULATIONS

T_{av} = average temperature in degrees Celcius
P_{av} = average station pressure in millimeters of mercury
P_f = ((Temp in °Kelvin * Temp Slope))+Temp Int.)*1.868
P_f = ((Temp in °Kelvin * 0.0664)+(-0.4213))*1.868

P_o/P_a = pressure ratio of P_f and P_{av} = 1 - P_f/P_{av}
Q_a = look up table volumetric flow rate
Q_{std} = sample volumetric flow rate corrected to standard conditions
V_{std} = sample volume corrected to standard conditions



PM₁₀ Analysis

The Doe Run Company

SAMPLER ID P2952			Federal Site #2 - Big River #4 - Primary								
Sample Date 2013	Filter ID	PM10 Filter Net Wt. g	T _{av} C	P _{av} mmHg	P _f mmHg	Ratio P _f /P _a	Q _a m ³ /min	Q _{std} m ³ /min	Elapsed Time hr	Sample Volume V _{std} m ³	Mass Conc. PM ₁₀ µg/m ³
2/3/2013	288592	0.0095	2	747.3	33.3	0.955	1.116	1.188	23.64	1684	6
2/6/2013	288581	0.0224	5	748.2	33.7	0.955	1.120	1.182	23.63	1675	13
2/9/2013	288571	0.0161	2	750.4	33.3	0.956	1.115	1.194	23.64	1693	10
2/12/2013	288558	0.0198	2	746.5	33.3	0.955	1.116	1.186	23.65	1683	12
2/15/2013	288549	0.0137	2	749.6	33.3	0.956	1.115	1.192	23.72	1697	8
2/18/2013	288539	0.0115	8	739.7	34.1	0.954	1.125	1.159	23.61	1642	7
2/21/2013	288528	0.0179	-3	746.6	32.6	0.956	1.107	1.202	24.21	1745	10
2/27/2013	288518	0.0161	1	741.3	33.2	0.955	1.114	1.181	23.77	1684	10

Valid Samples:	8	Monthly Average:	9
Scheduled Samples:	8	Standard Deviation:	3
Percent Data Captured:	100%	Maximum:	13
		Minimum:	6

NOTES

2/24/2013 - Ice Storm - No samples taken

DEFINITIONS and CALCULATIONS

T_{av} = average temperature in degrees Celsius
P_{av} = average station pressure in millimeters of mercury
P_f = ((Temp in °Kelvin * Temp Slope)+Temp Int.)*1.868
P_i = ((Temp in °Kelvin * 0.0664)+(-0.4213))*1.868

P_f/P_a = pressure ratio of P_f and P_{av} = 1 - P_f/P_{av}
Q_a = look up table volumetric flow rate
Q_{std} = sample volumetric flow rate corrected to standard conditions
V_{std} = sample volume corrected to standard conditions



PM₁₀ Analysis

The Doe Run Company

SAMPLER ID P4354									Federal Site #4 St. Joe Park		
Sample Date 2013	Filter ID	PM10 Filter Net Wt. g	T _{av} C	P _{av} mmHg	P _f mmHg	Ratio P _f /P _a	Q _a m ³ /min	Q _{std} m ³ /min	Elapsed Time hr	Sample Volume V _{std} m ³	Mass Conc. PM ₁₀ µg/m ³
2/3/2013	288590	0.0071	2	747.3	33.3	0.955	1.116	1.188	23.86	1700	4
2/6/2013	288577	0.0155	5	748.2	33.7	0.955	1.120	1.182	23.74	1683	9
2/9/2013	288566	0.0161	2	750.4	33.3	0.956	1.115	1.194	23.89	1711	9
2/12/2013	288562	0.0167	2	746.5	33.3	0.955	1.116	1.186	23.77	1692	10
2/15/2013	288545	0.0103	2	749.6	33.3	0.956	1.115	1.192	23.78	1701	6
2/18/2013	288534	0.0085	8	739.7	34.1	0.954	1.125	1.159	23.75	1651	5
2/21/2013	288524	0.0183	-3	746.6	32.6	0.956	1.107	1.202	23.70	1709	11
2/27/2013	288513	0.0201	1	741.3	33.2	0.955	1.114	1.181	23.73	1681	12

Valid Samples:	8	Monthly Average:	8
Scheduled Samples:	8	Standard Deviation:	3
Percent Data Captured:	100%	Maximum:	12
		Minimum:	4

NOTES

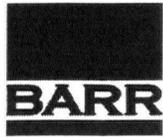
2/24/2013 - Ice Storm - No samples taken

Filter Blank			Nominal Volume	PM ₁₀ Tolerance ≤5 µg/m ³
2/27/2013	288512	-0.0029	1631	-1.8

DEFINITIONS and CALCULATIONS

T_{av} = average temperature in degrees Celcius
P_{av} = average station pressure in millimeters of mercury
P_f = ((Temp in °Kelvin * Temp Slope)+Temp Int.)*1.868
P_i = ((Temp in °Kelvin * 0.0664)+(-0.4213))*1.868

P_f/P_a = pressure ratio of P_f and P_{av} = 1 - P_f/P_{av}
Q_a = look up table volumetric flow rate
Q_{std} = sample volumetric flow rate corrected to standard conditions
V_{std} = sample volume corrected to standard conditions



PM₁₀ Analysis

The Doe Run Company

SAMPLER ID P1019										Big River Site #4 - QA	
Sample Date 2013	Filter ID	PM10 Filter Net Wt. g	T _{av} C	P _{av} mmHg	P _f mmHg	Ratio P _f /P _a	Q _a m ³ /min	Q _{std} m ³ /min	Elapsed Time hr	Sample Volume V _{std} m ³	Mass Conc. PM ₁₀ µg/m ³
2/3/2013	288591	0.0100	2	747.3	33.3	0.955	1.129	1.201	23.97	1728	6
2/9/2013	288570	0.0168	2	750.4	33.3	0.956	1.128	1.208	23.94	1735	10
2/15/2013	288557	0.0122	2	749.6	33.3	0.956	1.128	1.206	23.94	1732	7
2/21/2013	288538	0.0160	-3	746.6	32.6	0.956	1.120	1.216	23.12	1687	10
2/27/2013	288517	0.0170	1	741.3	33.2	0.955	1.127	1.194	23.47	1682	10
Valid Samples:		5		Scheduled Samples:		5		Percent Data Captured:		100%	
Monthly Average:										8	
Standard Deviation:										2	
Maximum:										10	
Minimum:										6	
NOTES											
DEFINITIONS and CALCULATIONS											
T _{av} = average temperature in degrees Celcius						P _f /P _a = pressure ratio of P _f and P _{av} = 1 - P _f /P _{av}					
P _{av} = average station pressure in millimeters of mercury						Q _a = look up table volumetric flow rate					
P _f = ((Temp in °Kelvin * Temp Slope)+Temp Int.)*1.868						Q _{std} = sample volumetric flow rate corrected to standard conditions					
P _f = ((Temp in °Kelvin * 0.0664)+(-0.4213))*1.868						V _{std} = sample volume corrected to standard conditions					

Lab Results (Lead and Cadmium)



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ANALYSIS REPORT

Client Information:

Barr Engineering Company
7390 Ohms Lane
Edina, MN 55439-2330

Chain of Custody No.: 13-0183
Date Received: 02/25/13
Analysis Method: 40 CFR §50
Appendix G

Location	National
-----------------	-----------------

Lab No.	Filter ID	Date	Site	µg Pb/Filter	µg Cd/Filter	Date - Analyst
130945	8642246	02/01/13	#3 East - WTP	17	< 10	03/05/13 - DS
130948	8642235	02/04/13	#3 East - WTP	43	< 10	03/05/13 - DS
130951	8642225	02/05/13	#3 East - WTP	128	< 10	03/05/13 - DS
130954	8642217	02/06/13	#3 East - WTP	< 10	< 10	03/05/13 - DS
130957	8642204	02/07/13	#3 East - WTP	< 10	< 10	03/05/13 - DS
130960	8698996	02/08/13	#3 East - WTP	< 10	< 10	03/05/13 - DS

Note: Report format B: Removed all data points other than #3 East-WTP.

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ANALYSIS REPORT

Client Information:

Barr Engineering Company
7390 Ohms Lane
Edina, MN 55439-2330

Chain of Custody No.: 13-0199
Date Received: 03/01/13
Analysis Method: 40 CFR §50
Appendix G

Location	National
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Lab No.	Filter ID	Date	Site	µg Pb/Filter	µg Cd/Filter	Date - Analyst
131002	8698985	02/11/13	#3 East - WTP	19	< 10	03/06/13 - DS
131005	8698973	02/12/13	#3 East - WTP	< 10	< 10	03/06/13 - DS
131008	8698965	02/13/13	#3 East - WTP	40	< 10	03/06/13 - DS
131011	8698952	02/14/13	#3 East - WTP	24	< 10	03/06/13 - DS
131014	8698942	02/15/13	#3 East - WTP	15	< 10	03/06/13 - DS

Note: Report format B: Removed all data points other than #3 East-WTP.

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ANALYSIS REPORT

Client Information:

Barr Engineering Company
7390 Ohms Lane
Edina, MN 55439-2330

Chain of Custody No.: 13-0221
Date Received: 03/08/13
Analysis Method: 40 CFR §50
Appendix G
Location **National**

Lab No.	Filter ID	Date	Site	µg Pb/Filter	µg Cd/Filter	Date - Analyst
131168	8698931	02/18/13	#3 East - WTP	43	< 10	03/11/13 - DS
131171	8698921	02/19/13	#3 East - WTP	77	< 10	03/13/13 - DS
131174	8698911	02/20/13	#3 East - WTP	16	< 10	03/13/13 - DS
131177	8698903	02/21/13	#3 East - WTP	11	< 10	03/13/13 - DS

Note: Report format B: Removed all data points other than #3 East-WTP.

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ANALYSIS REPORT

Client Information:

Barr Engineering Company
7390 Ohms Lane
Edina, MN 55439-2330

Chain of Custody No.: 13-0270
Date Received: 03/13/13
Analysis Method: 40 CFR §50
Appendix G

Location **National**

Lab No.	Filter ID	Date	Site	µg Pb/Filter	µg Cd/Filter	Date - Analyst
131311	8699189	02/25/13	#3 East - WTP	< 10	< 10	03/26/13 - DS
131314	8699180	02/26/13	#3 East - WTP	< 10	< 10	03/26/13 - DS
131317	8699169	02/27/13	#3 East - WTP	20	< 10	03/26/13 - DS
131320	8699157	02/28/13	#3 East - WTP	< 10	< 10	03/26/13 - DS

Note: Report format B: Removed all data points other than #3 East-WTP.

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ANALYSIS REPORT

Client Information:

Barr Engineering Company
7390 Ohms Lane
Edina, MN 55439-2330

Chain of Custody No.: 13-0183
Date Received: 02/25/13
Analysis Method: 40 CFR §50
Appendix G
Location **Big River**

Lab No.	Filter ID	Date	Site	µg Pb/Filter	µg Cd/Filter	Date - Analyst
130935	8642248	02/01/13	#4 Primary	15	< 10	03/05/13 - DS
130936	8642237	02/04/13	#4 Primary	82	< 10	03/05/13 - DS
130937	8642227	02/05/13	#4 Primary	31	< 10	03/05/13 - DS
130938	8642238	02/05/13	#4 QA	30	< 10	03/05/13 - DS
130939	8642219	02/06/13	#4 Primary	< 10	< 10	03/05/13 - DS
130940	8642206	02/07/13	#4 Primary	< 10	< 10	03/05/13 - DS
130941	8642207	02/07/13	#4 QA	< 10	< 10	03/05/13 - DS
130942	8698998	02/08/13	#4 Primary	< 10	< 10	03/05/13 - DS

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ANALYSIS REPORT

Client Information:
Barr Engineering Company
7390 Ohms Lane
Edina, MN 55439-2330

Chain of Custody No.: 13-0199
Date Received: 03/01/13
Analysis Method: 40 CFR §50
Appendix G
Location: Big River

Lab No.	Filter ID	Date	Site	µg Pb/Filter	µg Cd/Filter	Date - Analyst
130993	8698987	02/11/13	#4 Primary	17	< 10	03/06/13 - DS
130994	8698975	02/12/13	#4 Primary	19	< 10	03/06/13 - DS
130995	8698988	02/12/13	#4 QA	20	< 10	03/06/13 - DS
130996	8698967	02/13/13	#4 Primary	29	< 10	03/06/13 - DS
130997	8698954	02/14/13	#4 Primary	62	< 10	03/06/13 - DS
130998	8698955	02/14/13	#4 QA	67	< 10	03/06/13 - DS
130999	8698944	02/15/13	#4 Primary	92	< 10	03/06/13 - DS

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ANALYSIS REPORT

Client Information:

Barr Engineering Company
7390 Ohms Lane
Edina, MN 55439-2330

Chain of Custody No.: 13-0221
Date Received: 03/08/13
Analysis Method: 40 CFR §50
Appendix G
Location Big River

Lab No.	Filter ID	Date	Site	µg Pb/Filter	µg Cd/Filter	Date - Analyst
131160	8698933	02/18/13	#4 Primary	21	< 10	03/11/13 - DS
131161	8698923	02/19/13	#4 Primary	47	< 10	03/11/13 - DS
131162	8698934	02/19/13	#4 QA	53	< 10	03/11/13 - DS
131163	8698913	02/20/13	#4 Primary	26	< 10	03/11/13 - DS
131164	8698905	02/21/13	#4 Primary	16	< 10	03/11/13 - DS
131165	8699197	02/21/13	#4 QA	15	< 10	03/11/13 - DS

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ANALYSIS REPORT

Client Information:

Barr Engineering Company
7390 Ohms Lane
Edina, MN 55439-2330

Chain of Custody No.: 13-0270
Date Received: 03/13/13
Analysis Method: 40 CFR §50
Appendix G
Location **Big River**

Lab No.	Filter ID	Date	Site	µg Pb/Filter	µg Cd/Filter	Date - Analyst
131303	8699191	02/25/13	#4 Primary	11	< 10	03/26/13 - DS
131304	8699182	02/26/13	#4 Primary	< 10	< 10	03/26/13 - DS
131305	8699192	02/26/13	#4 QA	< 10	< 10	03/26/13 - DS
131306	8699171	02/27/13	#4 Primary	< 10	< 10	03/26/13 - DS
131307	8699159	02/28/13	#4 Primary	< 10	< 10	03/26/13 - DS
131308	8699160	02/28/13	#4 QA	< 10	< 10	03/26/13 - DS

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ANALYSIS REPORT

Client Information:

Barr Engineering Company
7390 Ohms Lane
Edina, MN 55439-2330

Chain of Custody No.: 13-0183
Date Received: 02/25/13
Analysis Method: 40 CFR §50
Appendix G
Location **St. Joe Park**

Lab No.	Filter ID	Date	Site	µg Pb/Filter	µg Cd/Filter	Date - Analyst
130929	8642252	02/01/13	#1 Site	41	< 10	03/05/13 - DS
130930	8642242	02/04/13	#1 Site	82	< 10	03/05/13 - DS
130931	8642231	02/05/13	#1 Site	33	< 10	03/05/13 - DS
130932	8642215	02/06/13	#1 Site	< 10	< 10	03/05/13 - DS
130933	8642211	02/07/13	#1 Site	38	< 10	03/05/13 - DS
130934	8698994	02/08/13	#1 Site	< 10	< 10	03/05/13 - DS

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ANALYSIS REPORT

Client Information:

Barr Engineering Company
7390 Ohms Lane
Edina, MN 55439-2330

Chain of Custody No.: 13-0199
Date Received: 03/01/13
Analysis Method: 40 CFR §50
Appendix G
Location **St. Joe Park**

Lab No.	Filter ID	Date	Site	µg Pb/Filter	µg Cd/Filter	Date - Analyst
131040	8698983	02/11/13	#1 Site	< 10	< 10	03/06/13 - DS
131041	8698979	02/12/13	#1 Site	< 10	< 10	03/06/13 - DS
131042	8698963	02/13/13	#1 Site	52	< 10	03/06/13 - DS
131043	8698959	02/14/13	#1 Site	< 10	< 10	03/06/13 - DS
131044	8698948	02/15/13	#1 Site	< 10	< 10	03/06/13 - DS

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ANALYSIS REPORT

Client Information:

Barr Engineering Company
7390 Ohms Lane
Edina, MN 55439-2330

Chain of Custody No.: 13-0221
Date Received: 03/08/13
Analysis Method: 40 CFR §50
Appendix G
Location St. Joe Park

Lab No.	Filter ID	Date	Site	µg Pb/Filter	µg Cd/Filter	Date - Analyst
131198	8698938	02/18/13	#1 Site	245	< 10	03/11/13 - DS
131199	8698927	02/19/13	#1 Site	< 10	< 10	03/11/13 - DS
131200	8698917	02/20/13	#1 Site	< 10	< 10	03/11/13 - DS
131201	8698901	02/21/13	#1 Site	15	< 10	03/11/13 - DS


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ANALYSIS REPORT

Client Information:

Barr Engineering Company
7390 Ohms Lane
Edina, MN 55439-2330

Chain of Custody No.: 13-0270
Date Received: 03/13/13
Analysis Method: 40 CFR §50
Appendix G
Location **St. Joe Park**

Lab No.	Filter ID	Date	Site	µg Pb/Filter	µg Cd/Filter	Date - Analyst
131341	8699196	02/25/13	#1 Site	52	< 10	03/26/13 - DS
131342	8699184	02/26/13	#1 Site	< 10	< 10	03/26/13 - DS
131343	8699165	02/27/13	#1 Site	< 10	< 10	03/26/13 - DS
131344	8699175	02/27/13	#1 Site	< 10	< 10	03/26/13 - DS
131345	8699164	02/28/13	#1 Site	< 10	< 10	03/26/13 - DS

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Meteorological Data

Meteorological Report

The Doe Run Company

Wind Speed

Site Name: Rivermines

Average Interval: 01 Hour

Units: mph

Sampling Frequency: 01 Second

2013 Day	Hour																								24 Hour Avg		
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	Max	Avg	
1-Feb	8.0	8.6	4.7	5.1	3.0	2.0	0.9	0.7	4.5	3.1	3.2	4.3	4.1	2.9	3.4	5.2	4.0	4.6	2.5	2.9	5.2	4.8	6.5	6.0	8.6	4.2	
2-Feb	5.9	3.6	5.9	5.1	4.4	1.6	4.8	5.3	6.2	5.2	7.4	10.0	9.2	8.5	7.8	7.2	5.5	6.3	4.0	0.7	0.7	0.0	0.1	0.3	10.0	4.8	
3-Feb	1.9	1.4	4.8	6.0	7.2	7.0	6.8	6.5	11.3	15.5	13.9	14.5	11.6	9.3	7.7	5.8	2.3	0.2	0.1	0.1	0.7	0.2	2.1	4.6	15.5	5.9	
4-Feb	4.4	2.5	4.0	8.6	7.7	6.6	9.2	8.7	10.8	6.7	7.1	10.7	13.6	9.9	8.8	8.1	5.4	4.4	5.6	4.8	4.7	3.5	0.9	0.3	13.6	6.5	
5-Feb	0.6	0.1	0.0	0.0	0.1	0.1	0.8	0.1	0.1	0.2	5.3	5.7	6.4	8.0	8.1	9.6	7.3	6.1	6.6	5.4	1.1	0.1	0.1	0.3	9.6	3.0	
6-Feb	0.5	0.1	0.1	0.1	0.0	0.0	0.1	0.1	1.7	5.2	4.2	3.9	4.1	5.6	5.8	5.4	4.4	1.7	1.9	2.5	5.1	4.0	1.3	0.7	5.8	2.4	
7-Feb	1.6	1.3	1.5	0.3	0.4	0.7	2.5	2.0	4.7	5.7	8.0	6.7	6.1	7.9	6.7	4.9	0.3	0.2	5.1	6.6	9.8	12.3	9.6	12.1	12.3	4.9	
8-Feb	10.7	9.9	10.4	10.2	8.9	8.5	10.3	8.9	10.4	9.1	9.4	7.1	6.8	5.9	4.9	4.8	4.6	1.9	3.1	1.8	2.8	2.1	3.1	3.7	10.7	6.6	
9-Feb	3.7	3.3	2.1	1.4	4.0	3.1	3.4	3.0	4.6	5.3	5.0	5.2	5.2	4.5	5.4	6.5	4.6	4.2	3.9	3.0	3.6	3.5	2.6	2.2	6.5	3.9	
10-Feb	3.0	5.0	6.6	6.7	6.9	4.3	6.2	7.9	7.2	10.2	9.9	9.8	11.4	12.3	10.4	10.3	8.6	5.8	5.9	6.2	7.8	8.5	8.7	10.4	12.3	7.9	
11-Feb	12.3	11.6	10.9	7.4	4.0	3.0	6.3	6.4	8.0	9.0	7.2	7.5	7.8	7.6	7.8	7.2	6.0	1.9	0.1	0.1	0.1	0.2	1.0	1.3	12.3	5.6	
12-Feb	1.5	1.5	0.6	0.6	0.1	0.1	0.3	0.1	0.2	1.8	1.9	2.6	2.1	3.1	2.4	1.1	1.2	0.5	1.1	0.5	0.3	0.5	3.2	4.1	4.1	1.3	
13-Feb	3.7	6.1	5.7	3.0	0.3	0.2	0.6	0.5	1.9	4.3	4.9	6.0	6.2	7.8	8.4	7.6	6.9	6.0	2.3	2.8	3.0	0.2	0.0	1.5	8.4	3.8	
14-Feb	0.0	1.5	1.6	2.2	5.6	4.5	5.3	5.2	5.0	6.0	6.1	7.1	6.5	6.4	7.4	6.5	7.4	4.1	2.0	4.8	5.1	2.1	0.1	0.1	7.4	4.3	
15-Feb	2.9	7.5	2.4	0.9	4.7	6.1	3.8	5.2	9.6	9.3	9.3	9.2	9.3	9.5	9.2	7.9	8.2	5.4	2.2	0.0	0.1	0.1	2.3	5.9	9.6	5.5	
16-Feb	1.9	3.1	6.7	4.2	3.0	0.4	0.8	0.7	7.7	7.6	7.1	7.5	6.9	5.7	5.3	4.5	4.2	1.6	0.1	0.0	0.0	0.1	0.0	0.1	7.7	3.3	
17-Feb	0.1	0.1	0.0	0.1	0.0	0.1	0.1	0.2	0.4	4.3	6.6	6.9	8.2	7.9	8.0	8.4	8.5	6.6	5.4	5.2	7.1	8.7	7.0	4.6	8.7	4.4	
18-Feb	9.9	10.6	10.1	10.0	10.6	11.4	11.7	12.7	12.6	13.9	14.4	14.7	16.0	15.0	15.1	13.1	11.1	12.0	7.6	9.3	10.2	7.5	11.5	7.2	16.0	11.6	
19-Feb	8.2	6.4	7.5	6.9	7.4	6.7	7.2	6.4	8.0	8.4	8.7	8.5	8.6	10.1	10.2	8.9	9.7	6.6	5.6	3.3	3.7	2.2	5.8	1.8	10.2	6.9	
20-Feb	2.4	2.4	2.0	1.4	0.9	1.4	0.6	3.8	5.1	3.9	6.0	8.1	6.0	8.0	7.0	8.1	7.0	8.1	7.0	6.0	8.1	7.0	7.0	9.0	9.0	5.2	
21-Feb	NA	6.0	9.0	8.1	10.0	10.0	10.0	10.0	11.0	14.0	14.0	13.0	6.0	10.0	NA	14.0	10.1										
22-Feb	NA	NA	NA																								
23-Feb	NA	4.9	8.1	6.0	4.9	3.0	NA	3.0	4.9	NA	NA	NA	NA	8.1	5.0												
24-Feb	NA	3.0	8.1	7.0	8.1	7.0	4.9	8.1	8.1	7.0	6.0	8.1	8.1	8.1	8.1	7.0	8.1	7.1									
25-Feb	NA	7.0	8.1	3.0	6.0	6.0	NA	NA	10.0	11.0	14.0	15.0	11.0	17.0	14.0	15.0	20.9	17.0	16.0	7.0	8.1	14.0	16.0	17.0	20.9	12.1	
26-Feb	18.0	15.0	11.0	10.0	11.0	9.0	7.0	8.1	10.0	9.0	11.0	10.0	11.0	4.9	8.1	8.1	11.0	11.0	9.0	11.0	8.1	9.0	14.0	11.0	18.0	10.2	
27-Feb	9.0	11.0	13.0	9.0	10.0	8.1	10.0	7.0	10.0	11.0	11.0	13.0	10.0	11.0	5.9	6.2	7.4	6.3	5.9	5.6	6.4	6.0	5.9	5.7	13.0	8.5	
28-Feb	5.3	5.7	5.7	4.6	4.9	5.0	4.3	5.3	8.6	6.7	6.6	5.7	5.9	6.8	7.2	6.7	6.3	5.9	5.0	4.1	3.0	2.2	1.7	2.6	8.6	5.2	
Maximum Hour//Monthly Average																								20.9	5.9		
Total Hours in Month																								672			
Valid Hours//Percent Data Captured																								608	90.5%		



NA - Data not available

Met Tower was down from Wednesday, February 20, 2013 at 11:00 through Wednesday, February 27, 2013 at 14:00. Data from Farmington Airport was used during the downtime when it was available.

Meteorological Report

The Doe Run Company

Wind Direction

Site Name: Rivermines

Average Interval: 01 Hour

Units: Degrees

Sampling Frequency: 01 Second

2013	Hour																								24 Hour Avg
Day	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	
1-Feb	295	311	301	310	297	300	294	261	264	251	221	238	245	265	237	211	201	186	177	176	172	188	191	192	241
2-Feb	203	210	209	231	231	228	226	230	238	259	277	292	290	288	288	286	288	293	301	274	243	222	182	18	242
3-Feb	79	254	295	292	301	297	292	297	304	312	321	318	319	319	317	317	347	21	145	139	156	311	199	198	256
4-Feb	188	180	187	203	204	205	209	226	217	229	225	226	228	226	234	220	210	263	358	338	346	346	330	344	248
5-Feb	335	11	173	172	321	334	156	322	146	344	225	249	257	280	274	296	293	306	327	338	336	192	210	338	260
6-Feb	19	173	205	350	346	163	349	230	171	152	120	104	113	115	135	153	134	115	126	158	165	162	144	167	170
7-Feb	169	159	149	87	152	138	147	175	186	199	204	228	225	218	238	280	219	260	316	318	323	328	326	327	224
8-Feb	331	325	324	322	326	335	342	334	340	350	343	345	348	352	339	341	330	22	51	40	46	72	85	72	255
9-Feb	91	103	118	111	105	126	139	149	151	152	151	156	150	136	155	153	148	134	162	163	158	150	175	157	141
10-Feb	152	153	165	161	170	162	166	186	185	164	167	178	178	192	200	198	186	183	206	223	230	237	227	247	188
11-Feb	257	251	264	271	259	241	238	247	257	266	267	268	261	269	269	259	271	273	208	191	197	234	215	245	249
12-Feb	235	222	226	226	334	339	297	322	328	32	66	107	143	113	53	51	47	48	34	68	46	329	4	347	167
13-Feb	340	339	313	324	330	248	287	219	242	246	260	245	255	253	263	258	260	249	253	227	237	246	232	211	264
14-Feb	0	253	256	238	221	238	234	245	252	267	258	271	274	257	262	283	299	293	295	306	310	315	193	238	252
15-Feb	298	321	333	316	320	320	321	325	326	323	324	328	324	335	325	329	335	346	342	327	252	238	325	324	319
16-Feb	308	306	315	312	315	305	302	285	317	328	306	318	313	308	266	270	297	287	260	177	173	222	195	196	278
17-Feb	145	242	204	288	168	169	51	105	134	162	179	163	157	168	172	162	158	168	166	178	187	184	179	169	
18-Feb	185	195	193	192	185	187	188	191	195	193	195	194	191	191	188	183	187	203	237	284	292	287	294	285	213
19-Feb	278	272	277	273	268	267	271	273	279	286	281	276	289	288	290	286	298	299	312	298	303	303	322	309	287
20-Feb	314	319	316	310	309	324	320	338	332	346	360	20	350	30	20	60	60	80	80	80	70	60	80	70	194
21-Feb	NA	80	70	80	90	100	100	90	80	120	80	90	50	60	NA	84									
22-Feb	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
23-Feb	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	220	230	240	270	250	NA	360	60	NA	NA	NA	NA	233
24-Feb	NA	NA	NA	NA	NA	NA	NA	NA	NA	180	110	170	150	140	120	100	100	100	100	80	90	90	80	70	112
25-Feb	NA	80	80	90	80	70	NA	NA	90	90	90	100	70	80	60	60	60	60	50	350	20	40	40	40	81
26-Feb	60	50	50	50	60	70	80	90	170	190	170	190	200	240	250	250	250	270	280	290	270	280	260	280	182
27-Feb	280	270	280	280	270	270	260	270	270	270	270	260	270	250	261	279	283	281	281	281	292	283	286	290	274
28-Feb	282	286	288	289	288	288	284	295	308	301	301	290	283	292	299	302	306	307	295	288	280	275	270	290	291
Total Hours in Month																								672	
Valid Hours																								608	
Percent Data Captured																								90.5%	



NA - Data not available

Met Tower was down from Wednesday, February 20, 2013 at 11:00 through Wednesday, February 27, 2013 at 14:00. Data from Farmington Airport was used during the downtime when it was available.

Meteorological Report

The Doe Run Company

ΣΘ

Site Name: Rivermines

Average Interval: 01 Hour
Units: Degrees

2013	Hour																								24 Hour Avg
Day	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	
1-Feb	20	15	17	15	17	17	14	8	20	29	31	30	28	43	31	26	18	13	13	18	20	17	16	18	21
2-Feb	15	18	15	17	17	10	15	16	19	19	21	22	22	23	21	21	20	20	15	13	9	2	1	6	16
3-Feb	28	13	17	19	17	18	19	18	21	16	19	17	20	22	21	22	15	4	5	3	10	31	21	16	17
4-Feb	14	17	18	18	18	19	17	21	21	23	20	20	20	20	21	20	18	20	17	13	12	13	11	26	18
5-Feb	8	3	0	0	3	3	6	4	21	9	20	22	24	23	23	21	21	15	10	8	21	22	11	5	13
6-Feb	13	8	24	11	1	2	3	19	21	21	29	30	27	23	25	23	20	18	19	18	20	21	21	20	18
7-Feb	19	22	29	27	12	13	20	19	21	17	18	19	18	22	19	20	5	5	14	14	15	14	15	15	17
8-Feb	14	14	14	13	14	16	16	18	16	17	17	17	19	18	19	17	13	15	19	16	20	22	21	24	17
9-Feb	20	23	16	19	20	24	21	22	22	24	25	33	27	31	24	22	24	23	26	24	24	22	26	20	23
10-Feb	20	21	20	18	18	19	18	23	20	18	19	19	18	18	15	16	15	13	12	14	16	18	16	18	18
11-Feb	20	18	19	19	17	16	15	17	20	21	24	20	23	25	22	20	18	12	2	0	4	5	9	8	16
12-Feb	13	14	11	13	2	2	5	5	9	18	25	25	21	30	23	16	13	8	9	14	4	12	22	12	13
13-Feb	15	18	16	16	10	3	11	9	13	19	22	23	23	22	21	21	20	17	12	14	11	2	1	5	14
14-Feb	0	10	5	9	11	13	13	13	19	19	21	23	24	23	20	22	17	18	12	14	12	7	1	2	14
15-Feb	12	12	12	10	8	11	15	16	17	19	23	25	22	20	19	23	19	14	9	6	2	4	12	12	14
16-Feb	12	14	12	13	10	7	12	16	17	19	24	23	36	32	24	28	23	15	5	0	0	2	2	4	15
17-Feb	3	6	2	4	2	1	4	12	9	25	23	28	26	26	27	23	21	21	19	21	18	18	18	22	16
18-Feb	18	19	17	16	17	14	16	16	18	17	18	17	16	17	16	16	17	18	19	22	20	20	21	19	18
19-Feb	21	20	20	19	16	19	18	22	21	22	23	22	24	23	23	24	20	18	11	15	13	13	9	11	19
20-Feb	13	13	11	11	10	12	12	16	17	17	NA	13													
21-Feb	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
22-Feb	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
23-Feb	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
24-Feb	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
25-Feb	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
26-Feb	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
27-Feb	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	19	21	22	22	21	22	20	22	22	20	21
28-Feb	22	20	21	20	22	21	20	20	17	20	20	21	21	23	21	19	18	16	20	19	20	18	15	18	20
																								Total Hours In Month	672
																								Valid Hours	500
																								Percent Data Captured	74.4%

NA - Data not available

Met Tower was down from Wednesday, February 20, 2013 at 11:00 through Wednesday, February 27, 2013 at 14:00. Data from Farmington Airport was used during the downtime when it was available.

Meteorological Report

The Doe Run Company

Temperature

Site Name: Rivermines

Average Interval: 01 Hour

Units: Deg. C

Sampling Frequency: 01 Second

2013 Day	Hour																								24 Hour	
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	Max	Avg
1-Feb	-10.7	-11.4	-11.9	-12.3	-12.8	-13.1	-13.4	-12.9	-10.5	-8.7	-7.1	-5.0	-3.4	-2.7	-1.5	-1.2	-1.5	-2.1	-2.1	-2.3	-2.5	-2.7	-2.7	-2.8	-1.2	-6.5
2-Feb	-2.5	-1.9	-1.6	-1.3	-1.7	-1.7	-1.2	-0.7	0.1	1.3	5.0	6.4	7.2	8.0	7.1	6.1	5.6	4.3	3.1	3.0	2.2	1.4	-0.1	-0.8	8.0	2.0
3-Feb	0.2	0.1	2.8	3.7	3.2	2.7	2.2	2.0	2.8	2.7	2.7	2.9	3.5	4.2	4.8	5.1	4.6	3.2	0.1	-1.6	-1.2	-1.3	0.4	2.1	5.1	2.2
4-Feb	2.5	2.7	3.8	5.5	6.0	6.3	7.2	8.1	8.3	6.7	7.5	9.8	11.3	12.5	14.1	14.2	13.9	11.6	9.1	6.6	5.1	3.5	1.6	-0.6	14.2	7.4
5-Feb	-1.6	-2.5	-3.5	-4.1	-4.6	-5.0	-4.7	-4.1	0.3	2.4	9.0	12.5	14.9	16.2	16.4	15.5	14.6	12.9	11.2	9.3	5.8	3.7	2.1	0.5	16.4	4.9
6-Feb	2.0	-0.3	-2.1	-2.9	-3.6	-4.1	-4.4	-4.0	0.9	4.5	6.6	8.5	10.3	11.7	13.2	13.2	12.1	10.7	9.4	8.2	7.9	7.4	6.6	5.3	13.2	4.9
7-Feb	5.8	5.5	5.1	4.2	4.5	5.9	6.2	6.7	8.7	12.3	14.4	15.4	15.0	17.7	17.9	13.2	11.7	11.4	10.9	9.7	9.0	7.6	6.8	5.9	17.9	9.6
8-Feb	5.0	4.6	3.5	3.0	2.7	2.5	1.8	1.5	1.3	1.1	1.4	1.5	1.7	1.7	2.0	2.1	2.0	1.8	1.5	1.2	1.2	1.1	0.6	0.0	5.0	2.0
9-Feb	-0.4	-0.7	-1.2	-1.2	-1.5	-1.5	-1.4	-1.4	-1.0	-0.7	0.1	1.6	3.5	4.8	5.7	5.7	5.0	4.6	4.0	3.6	3.7	3.3	3.4	3.4	5.7	1.7
10-Feb	3.9	4.4	4.9	5.3	6.1	6.7	7.1	8.1	7.2	7.6	8.1	8.9	9.7	10.9	11.9	13.6	14.2	13.1	12.8	12.4	11.9	11.5	10.6	9.7	14.2	9.2
11-Feb	7.8	5.8	4.7	3.7	2.7	2.2	2.2	2.6	4.7	6.3	8.2	9.4	10.4	11.1	11.4	11.2	10.3	8.3	5.0	1.6	0.0	-0.7	-1.0	-1.5	11.4	5.3
12-Feb	-2.0	-2.4	-3.0	-3.4	-4.2	-4.8	-5.1	-4.0	-0.4	1.7	4.4	6.0	6.6	7.2	7.3	7.2	6.7	5.8	5.2	5.0	4.6	4.1	3.8	3.5	7.3	2.1
13-Feb	3.2	2.4	1.4	1.1	1.1	1.4	1.6	1.7	2.4	4.2	7.3	9.0	10.5	11.1	11.6	11.4	10.5	8.7	6.5	5.3	4.5	2.2	-0.2	-0.8	11.6	4.9
14-Feb	-1.1	-0.6	0.4	0.1	3.4	3.4	3.6	4.3	7.1	9.7	12.0	13.6	14.1	14.5	14.3	14.3	12.4	10.9	9.2	8.7	7.7	5.8	4.3	3.6	14.5	7.3
15-Feb	4.9	5.8	4.4	1.5	1.9	1.7	1.1	0.9	1.4	1.9	2.9	3.4	4.2	4.4	4.5	4.3	3.6	2.6	0.4	-1.9	-2.5	-2.5	-2.2	-1.8	5.8	1.9
16-Feb	-2.9	-3.4	-3.7	-4.7	-5.6	-6.7	-7.0	-5.8	-4.0	-2.8	-0.9	0.1	1.4	2.0	3.2	3.2	2.5	1.1	-1.5	-3.6	-4.8	-5.8	-6.1	-5.2	3.2	-2.5
17-Feb	-4.6	-4.0	-3.7	-3.4	-3.3	-3.0	-3.0	-1.8	-0.2	2.8	5.6	7.3	8.5	9.6	10.3	10.5	10.0	8.5	7.2	6.4	6.2	6.6	6.7	6.8	10.5	3.6
18-Feb	7.7	7.6	7.4	7.5	7.7	8.0	8.4	9.2	10.4	11.1	11.3	12.0	11.1	10.5	10.4	10.0	10.0	10.1	10.1	7.9	5.0	4.6	3.2	2.0	12.0	8.5
19-Feb	0.9	-0.3	-1.0	-1.7	-2.1	-2.3	-2.6	-2.0	-0.7	0.6	2.0	3.3	4.3	4.7	4.7	4.7	3.4	1.8	-0.4	-1.3	-2.0	-2.9	-3.5	-4.6	4.7	0.1
20-Feb	-4.8	-5.2	-5.6	-5.9	-6.4	-7.0	-7.2	-6.7	-6.0	-5.5	-5.0	-3.9	-2.8	-2.8	-2.2	-1.1	-2.2	-2.8	-2.8	-3.9	-5.0	-5.0	-6.1	-5.0	-1.1	-4.6
21-Feb	-17.8	-6.1	-6.1	-5.0	-5.0	-5.0	-5.0	-3.9	-3.9	-3.9	-3.9	-2.8	-2.8	-2.8	-2.2	-2.2	-1.1	-2.2	-1.1	-1.1	0.0	0.0	0.0	0.0	0.0	-3.5
22-Feb	0.0	0.0	0.0	0.0	1.1	1.1	1.1	1.1	1.1	1.1	1.1	0.0	-1.1	-1.1	0.0	0.0	-1.1	-1.1	-1.1	-2.2	-2.8	-3.9	-3.9	-3.9	1.1	-0.8
23-Feb	-5.0	-5.0	-7.2	-7.2	-7.2	-7.8	-7.2	-6.1	-3.9	-2.2	-2.2	-1.1	1.1	2.2	2.8	2.8	2.8	2.8	2.2	-1.1	-2.2	-2.8	-3.9	-3.9	2.8	-2.5
24-Feb	-6.1	-6.1	-6.1	-7.2	-7.2	-7.8	-7.8	-7.2	-2.8	1.1	3.9	5.0	6.1	7.2	7.8	7.8	7.8	5.0	2.8	2.2	2.2	1.1	1.1	0.0	7.8	0.1
25-Feb	-1.1	0.0	0.0	-1.1	-1.1	-2.2	-2.2	0.0	3.9	6.1	7.2	7.8	7.8	8.9	7.8	7.2	7.2	6.1	6.1	3.9	2.8	2.2	2.2	2.2	8.9	3.4
26-Feb	2.2	2.2	2.2	2.2	2.2	2.8	2.8	2.8	5.0	5.0	5.0	6.1	7.2	6.1	3.9	2.8	2.2	2.2	2.2	2.2	2.2	1.1	1.1	1.1	7.2	3.1
27-Feb	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	2.2	2.2	2.2	1.1	1.1	1.3	1.7	1.3	1.0	0.6	0.2	0.0	-0.2	-0.2	-0.3	2.2	1.0
28-Feb	-0.3	-0.4	-0.4	-0.5	-0.5	-0.5	-0.4	-0.2	0.3	1.0	0.9	1.1	1.4	2.1	2.8	1.9	1.6	1.2	0.9	0.4	0.0	-0.3	-0.6	-0.7	2.8	0.4
																								Maximum Hour/Monthly Average	17.9	2.3
																								Total Hours in Month	672	
																								Valid Hours	672	
																								Percent Data Captured	100.0%	

Met Tower was down from Wednesday, February 20, 2013 at 11:00 through Wednesday, February 27, 2013 at 14:00. Data from Farmington Airport was used during the downtime.

Meteorological Report

The Doe Run Company

Site Pressure

Site Name: Rivermines

Average Interval: 01 Hour

Units: mmHg

Sampling Frequency: 01 Second

2013 Day	Hour																								24 Hour		
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	Max	Avg	
1-Feb	755	755	755	756	756	756	756	757	757	757	757	757	756	754	754	754	753	753	753	752	752	752	752	751	757	755	
2-Feb	751	750	750	749	749	748	748	748	748	748	748	747	747	747	747	748	748	748	748	748	748	748	747	746	746	751	748
3-Feb	746	746	746	746	746	747	747	747	747	748	749	749	749	749	748	748	748	748	748	747	747	746	745	745	749	747	
4-Feb	745	744	744	743	743	742	742	741	741	742	742	741	741	740	740	739	739	740	741	742	743	743	744	744	745	742	
5-Feb	744	744	744	744	744	744	744	744	744	744	744	743	742	742	742	743	743	743	743	744	745	746	747	747	748	748	744
6-Feb	748	748	749	749	749	749	749	750	750	750	750	750	749	748	747	747	747	747	747	747	747	747	746	746	750	748	
7-Feb	746	746	745	745	745	744	744	744	744	743	743	743	742	741	741	741	741	742	742	743	743	744	745	745	746	743	
8-Feb	746	746	747	747	748	749	750	751	752	752	753	753	752	752	753	753	752	753	753	753	753	753	753	753	753	753	751
9-Feb	753	753	754	753	753	753	753	753	753	753	753	752	751	750	749	748	748	747	748	748	747	746	746	746	754	750	
10-Feb	745	744	744	742	742	741	741	740	741	740	738	738	736	735	736	736	736	736	737	738	738	739	739	740	745	739	
11-Feb	741	742	743	744	744	744	745	746	746	746	747	747	747	747	747	747	747	747	747	747	748	748	749	749	749	746	
12-Feb	749	749	749	749	748	748	748	749	749	748	747	747	747	746	745	745	745	744	744	744	744	744	743	743	749	746	
13-Feb	743	743	743	742	742	742	742	743	743	743	742	742	741	741	741	741	741	741	741	742	742	742	742	742	743	742	
14-Feb	742	742	742	741	742	742	742	742	742	743	743	743	743	743	743	743	743	744	745	745	746	746	746	746	746	743	
15-Feb	747	747	747	747	748	748	749	750	750	751	751	751	751	750	750	750	750	750	750	751	751	751	751	751	751	750	
16-Feb	750	750	751	751	751	751	751	751	751	751	751	751	750	750	749	749	749	749	749	749	750	750	750	750	751	750	
17-Feb	749	749	749	749	749	749	749	749	749	749	748	748	747	746	745	745	744	744	745	745	744	744	744	743	749	747	
18-Feb	743	742	742	742	742	741	741	741	741	740	740	740	739	738	737	736	735	735	736	737	739	740	742	743	743	740	
19-Feb	744	744	745	745	746	746	746	747	747	747	748	748	748	748	748	749	749	750	750	751	751	752	752	752	752	748	
20-Feb	753	753	753	753	753	753	753	754	755	755	755	755	755	754	753	753	753	753	753	753	753	753	753	753	755	754	
21-Feb	NA	753	752	751	751	751	750	751	750	750	747	746	747	745	743	743	743	742	742	742	742	742	742	742	753	747	
22-Feb	742	742	742	742	743	743	744	744	745	745	746	746	746	746	747	747	747	747	747	747	747	748	748	748	748	745	
23-Feb	748	748	748	747	747	747	747	747	747	747	747	747	747	746	746	746	746	746	746	747	747	747	747	747	748	747	
24-Feb	747	747	747	747	747	748	748	749	749	749	749	749	748	748	747	747	747	747	747	747	747	747	747	747	749	748	
25-Feb	747	747	747	747	746	746	746	746	746	746	745	745	743	742	741	740	739	738	739	739	739	737	736	734	747	743	
26-Feb	733	732	731	730	730	729	729	729	730	730	730	731	731	731	732	733	734	735	736	736	737	738	739	739	739	733	
27-Feb	739	739	739	739	740	741	741	741	742	741	742	742	742	742	741	741	742	742	742	743	743	743	743	743	743	741	
28-Feb	743	743	743	743	744	744	745	745	745	746	746	746	746	746	746	747	747	747	747	747	748	748	748	747	748	746	
																								Maximum Hour//Monthly Average	757	746	
																								Total Hours In Month	672		
																								Valid Hours//Percent Data Captured	671	99.9%	

NA - Data not available

Met Tower was down from Wednesday, February 20, 2013 at 11:00 through Wednesday, February 27, 2013 at 14:00. Data from Farmington Airport was used during the downtime when it was available.

Meteorological Report

The Doe Run Company

Precipitation

Site Name: Rivermines

Average Interval: 01 Hour
Sampling Frequency: 01 Second

2013 Day	Hour																								24 Hour		
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	Max	Total	
1-Feb	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2-Feb	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
3-Feb	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
4-Feb	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.02	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
5-Feb	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
6-Feb	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
7-Feb	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.06	0.01	0.07	0.09	0.01	0.00	0.00	0.00	0.00	0.00
8-Feb	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
9-Feb	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.04	0.03	0.00
10-Feb	0.01	0.00	0.00	0.00	0.00	0.00	0.01	0.05	0.28	0.13	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
11-Feb	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
12-Feb	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.05	0.05	0.00
13-Feb	0.04	0.01	0.08	0.05	0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
14-Feb	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
15-Feb	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
16-Feb	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
17-Feb	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
18-Feb	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.12	0.02	0.03	0.01	0.00	0.00	0.00	0.00	0.00
19-Feb	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
20-Feb	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
21-Feb	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.04	0.02	0.02	0.03	0.02	0.00	0.00	0.00	0.00	0.00	0.04	0.04	0.00	0.01	0.02	0.05	0.05	0.00
22-Feb	0.06	0.05	0.05	0.05	0.04	0.04	0.04	0.04	0.06	0.07	0.07	0.07	0.05	0.05	0.04	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
23-Feb	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
24-Feb	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
25-Feb	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
26-Feb	0.17	0.08	0.02	0.02	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
27-Feb	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
28-Feb	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Maximum Hour//Monthly Total																								0.28	3.22		
Total Hours in Month																								672			
Valid Hours//Percent Data Captured																								672	100.0%		



Met Tower was down from Wednesday, February 20, 2013 at 11:00 through Wednesday, February 27, 2013 at 14:00. Data from Farmington Airport was used during the downtime.